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EXAMINER	
SKOWRONEK, KARLHEINZ R	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/797,359	BOYER ET AL.	
	Examiner	Art Unit	
	KARLHEINZ R. SKOWRONEK	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,7-20,25-36 and 42-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 7-20, 25-36, and 42-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Status

Claims 1-3, 7-20, 25-36, and 42-46 are pending.

Claims 4-6, 21-24, 37-41are cancelled.

Claims 1-3, 7-20, 25-36, and 42-46 have been examined.

Claims 1-3, 7-20, 25-36, and 42-46 are rejected.

Priority

This application was filed on 09 March 2004 and makes no claim of priority to any prior filed application.

Interview Summary

The summary of the interview (see remarks, filed 30 June 2009, p. 19) is accurate.

Claim Rejections - 35 USC § 112

Response to Arguments

The rejection of claims 19-20, 25-36, and 43-46 as lacking clarity and written description by invoking 35 USC 112, sixth paragraph is withdrawn in view of the amendment to the claims. The rejection of claims 21 and 24 under 35 USC 112 is withdrawn in view of the cancellation of the claims.

Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The following rejection is necessitated by amendment of the claims.

Claims 19-20, 25-36, and 42-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 19-20, 31-32, 43-44, and 46 recite “limitations" of the system of claims 19 and 43, but appear to recite method steps. Parent claims 19 and 43 are directed to a system comprising various modules for performing specifies functions. The claims also recite active steps defining a search method. Claims 20, 31, 44, and 46 are similarly directed to a system but recite active method steps. The combination of active method steps and product limitations make the claims indefinite. In addition, the combination results in an ambiguous class of invention by including limitations drawn to a machine and to a process. Claims 20, 25-36, 42, and 44-46 are also rejected because they depend from claims 19 and 43, and thus contain the above issues due to said dependence.

First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following rejection is necessitated by amendment of the claims.

Claims 9-10, 27-28, and 42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject

matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. THIS IS A NEW MATTER REJECTION.

The claims recite limitations directed to dictionaries consisting of a prefix dictionary, a suffix dictionary, and a stop word dictionary. A review of the specification reveals the embodiment of dictionaries consisting of a prefix dictionary, a suffix dictionary, and a stop word dictionary is not described. Rather the specification guides at p. 18, lines 6-9, "The aforementioned dictionaries of the system 700 can include a prefix dictionary 708 (containing a list of common prefixes for the technical terms of interest), a suffix dictionary 7 10 (containing a list of common suffixes for the technical terms of interest), and an optional negative dictionary 712". The language used by the specification is open language, which is contrasted by the instant claimed closed language of consisting. Figure 7 shows a system consisting of a structure dictionary, prefix dictionary, suffix dictionary, and negative dictionary. Therefore, amendment of the claims to recite “consisting" is new matter.

Claim Rejections - 35 USC § 101

Response to Arguments

The rejection of claims 19-21 and 24-46 as non-statutory under 35 USC 101 is withdrawn in view of the amendments made to claims 19,20, 25-36, and 42-46 and the cancellation of claims 21-24 and 37-41.

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following rejection is necessitated by amendment of the claims.

Claims 19-20, 25-36, and 42-46 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 19-20, 25-36, and 42-46 are directed to a system but recites process limitations. As a result the claims are not statutory because they embrace two different classes of statutory invention, machine and process.

Claim Rejections - 35 USC § 103

Response to Arguments

The rejection of claims 1-3, 6-7, 9-17, 19-21, 24-25, 27-35, 37-39, and 42 as unpatentable over Friedman, in view of Brecher in view of Moore et al. in view of Dittmar et al., in view of Hull et al. and in view of Leiter et al. under 35 U.S.C. 103(a) is withdrawn in view of the amendments to the claims.

The rejection of claims 8 and 26 as unpatentable over Friedman, in view of Brecher, in view of Moore et al., in view of Dittmar et al., in view of Hull et al. and in view of Leiter et al. as applied to claims 1-3, 6-7, 9-17, 19-21, 24-25, 27-35, 37-39, and 42 above, and further in view of Drefahl et al. and Murray-Rust et al. under 35 U.S.C. 103(a) is withdrawn in view of the amendments to the claims.

The rejection of claims 18 and 36 as unpatentable over Friedman, in view of Brecher, in view of Moore et al., in view of Dittmar et al., in view of Hull et al. and in view of Leiter et al. as applied to claims 1-3, 6-7, 9-17, 19-21, 24-25, 27-35, 37-39, and 42

above, and further in view of Kemp et al. under 35 U.S.C. 103(a) is withdrawn in view of the amendments to the claims.

The rejection of claims 43-44 as unpatentable over Friedman, in view of Brecher, in view of Moore et al., in view of Dittmar et al., in view of Hull et al. and in view of Leiter et al. as applied to claims 1-3, 6-7, 9-17, 19-21, 24-25, 27-35, 37-39, and 42 above, and Shivaratri et al. under 35 U.S.C. 103(a) is withdrawn in view of the amendments to the claims.

The rejection of claim 45 and 46 as unpatentable over Friedman, in view of Brecher, in view of Moore et al., in view of Dittmar et al., in view of Hull et al. and in view of Leiter et al., and Shivaratri et al. as applied to claim 43 above, and further in view of Drefahl et al. and Murray-Rust et al. under 35 U.S.C. 103(a) is withdrawn in view of the amendments to the claims.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The following rejection is necessitated by amendment of the claims.

Claim 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al. (Journal of Chemical Information and Computer Sciences, Vol. 17, No. 1, p. 9-15, 1977), in view of Brecher, in view of Singh et al. (J. Chem. Inf. Comput. Sci. 2003, 43, 743-752), in view of Moore et al., and in view of Cardinali (Industrial Management + Data Systems. Wembley: 1994. Vol. 94, Iss. 4; pg. 3, 6 pgs).

Claim 1 is directed to a method of processing a text document in which:

a) the text document is partitioned and assigned semantic meaning by applying rules, regular expression, and a dictionaries comprising a dictionary of prefixes and a dictionary of suffixes of chemical name fragments;

b) substructures are recognized in the chemical name fragments;

c) keywords associated with chemical name fragments and substructures are extracted and indexed;

d) chemical name fragments and substructures that do not contain a number are added to the text index;

e) structural connectivity information is determined for the chemical name fragments and substructures that do not contain a number;

f) representations of the chemical name fragments and substructures associated with connectivity information in connectivity tables are indexed;

g) the association between the text index and the chemical substructure index is stored;

h) a graphical user interface is provided to search the text and chemical substructure index, the search comprising entering a first search term, then selecting one or more graphical substructure representations from a graphical list of substructures; and

i) a search result representing the intersection of the substructure index and the text index that identifies at least one document containing chemical compounds having the selected substructure and chemical fragment name connectivity is received.

Claims 2 and 20 are directed to searching with a key word that is not a chemical name.

Claim 3 is directed to performing the process by execution of software.

Claims 7 and 25 are directed to looking up structures in a structure dictionary.

Claims 9 and 27 are directed to dictionaries consisting of a dictionary of prefixes and a dictionary of suffixes of chemical name fragments.

Claims 10 and 28 are directed to dictionaries consisting of a dictionary of prefixes a dictionary of suffixes of chemical name fragments and a dictionary of stop words.

Claims 11 and 29 are directed to a list of stop words.

Claims 12 and 30 are directed to common word endings.

Claims 13 and 31 are directed to the application of regular expression to remove characters from a name fragment.

Claims 14 and 32 are directed to the regular expression that comprises a plurality of patterns.

Claims 15 and 33 are direct to the punctuation of the patterns.

Claims 16 and 34 are directed to upper case C, O, R, N, and H.

Claims 17 and 35 are directed to lower case xy, ene, ine, yl, ane, and oic.

Allen discloses an algorithm for partitioning compound chemical names by rules and dictionaries. Allen et al. shows the application of dictionaries or lists comprising a chemical prefix dictionary and a chemical suffix dictionary to recognize chemical names (p. 9, col. 1). Allen shows the extraction of keywords associated with the recognized chemical name fragments and indexing in a text index (p. 13, col. 1). Allen et al. shows that not all chemical names have numbers. Allen et al. shows that chemical name fragments that do not have numbers are added to the index. Regarding claim 9, Allen et

al. shows that dictionaries consisting of a prefix(start) and a suffix (stop) are applied until the end of a name is reached (p. 13, col. 1). Regarding clam 16, Allen et al. show that strings of element symbols are detected, reading on C, O, N, and H (p. 11, col. 1).

Allen et al. do not show that a text document is partitioned, substructures are recognized and structural connectivity is determined.

Brecher et al. shows that shows the application of regular expression to partition to recognize chemical name fragments (col. 5, line 41- col. 6, line 25). Brecher et al. shows a file based input reading on a text document (col. 2, line 49). Brecher et al. shows that descriptive text is recognized and removed (col. 8, line 59). Brecher shows that the internal processing operates by comparing portions of the chemical name to text strings that have been predetermined to have respective characteristics and properties in accordance with rules of chemical nomenclature, and with exceptions to such rules, and assembling a structure from pieces corresponding to selected text strings (col. 2, line 59-65). Brecher shows detection of upper case O, R, and N (col. 5, line 2 and 14). Brecher et al. shows that identifying information is extracted from the substructures and fragments to produce a fully parsed chemical name that is correlated to a chemical structure (figure 6). Referring to figure 6, the nomToken data structure is an index that correlates fragment text or key word with structural connectivity information in the form of a connection table. Brecher shows the determination connectivity information for each key word via a lexicon or dictionary of nomTokens (col. 6, line 41-42). Brecher shows the concatenation of nomtokens to create larger fragments (col. 8, line 29-34). Regarding claim 11, Brecher shows that the lexicon has

at least a sub lexicon to identify stop-words (col. 8, line 49-50). Brecher shows the method allows chemical names to be accurately converted to chemical structures in real time or in nearly real time to provide users with a powerful, practical tool (col. 2, line 11-14).

Signh et al. shows the combination of text search and structure search (abstract). Singh et al. shows that there are meaningful relationships between compounds that are not just encoded in their structures but can be found in the textual descriptions surrounding them in the medical literature (p. 743, col. 2). Signh et al. shows that text documents are parsed and chemical names extracted (745, col. 1). Singh et al. shows that chemical names are associated with structural connectivity (p. 745, col. 2). Regarding claim 2, Singh et al. shows that keywords that are not chemical names may also be used to search (p. 746, col. 1). Signh et al. shows searching text and structure takes advantage of the contextual knowledge developed by scientists within the pharmaceutical, biological, and medicinal chemistry community (p. 751, col. 2).

Moore et al. shows a method of storing extracted identifying information in a searchable index (col. 4, line 28-35). Regarding claims 2, 20 and 38, Moore et al. shows that the index can be searched by a combination of substructure names, reading on text terms and keywords (col. 7, line 47-48) and connectivities, reading on graphical representations (col. 10, line 43-46). Moore shows that multiple databases can be interrelated to form a relational database forming an integrated chemical information system that can be searched using combination searches (col. 11, line 1-8). Moore et al. shows the method has the advantage of simplified search queries (col. 12, line 42-

46). Moore et al. shows the method has the further advantages of reducing database development and maintenance costs, simplify interfacing with other information systems (col. 2, line 10-23).

Cardinali et al. shows graphical user interfaces (GUI). Cardinali shows that GUIs have at least seven benefits: providing the ability to complete work faster; providing the ability of correctly completing tasks; increasing productivity; reducing user frustration; reducing fatigue; making software easier to learn; and easier to explore capabilities of the software.

Regarding claim 10 and 28, the combination of Allen et al. in view of Brecher make the limitation of dictionaries consisting of a dictionary of prefixes a dictionary of suffixes of chemical name fragments and a dictionary of stop words. Allen et al shows dictionaries of prefixes and suffixes. Brecher shows a dictionary of stop words.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Allen et al. for indexing chemical name fragments using chemical prefix and suffix dictionaries with the teachings of Brecher showing the association of chemical name fragments and chemical connectivity because Brecher shows the method allows chemical names to be accurately converted to chemical structures in real time or in nearly real time to provide users with a powerful, practical tool. It would have been further obvious to on of ordinary skill in the art to further modify Allen et al. in view of Brecher showing methodologies for creating chemical text word and chemical connectivity index by combining a search of the text terms with a search of structural connectivity of Signh et al. because Signh et al. shows searching text and

structure takes advantage of the contextual knowledge developed by scientists within the pharmaceutical, biological, and medicinal chemistry community. It would have been further obvious to one of ordinary skill in the art at the time of invention to further modify the method of partitioning text documents of Allen et al. in view of Brecher with the search of Moore et al. because Moore et al. shows the method has the further advantages of reducing database development and maintenance costs, simplify interfacing with other information systems. It would have been further obvious to modify the method of searching text and structure indices of Allen et al. in view of Brecher and in view of Singh et al. and Moore et al. with a GUI of Cardinali because Cardinali shows GUIs provide the advantages of providing the ability to complete work faster; providing the ability of correctly completing tasks; increasing productivity; reducing user frustration; reducing fatigue; making software easier to learn; and easier to explore capabilities of the software. It would have been further obvious to one of ordinary skill in the art to modify the teachings of Allen et al. in view of Brecher in view of Singh et al. and in view of Cardinali because all the claimed elements were known, in the prior art, and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention.

The following rejection is necessitated by amendment of the claims.

Claim 8 and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above, and further in view of Vander Stouw (Journal of Chemical Documentation, Vol. 14, No. 4, p. 185-193, 1974), in view of Drehfal et al. and in view of Murray-Rust.

Claim 8 and 26 are directed a step of testing if a chemical fragment name occurs in a structure dictionary in SMILES format or MOL file format.

Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above shows a method of partitioning a text document.

Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali do not show a testing if a fragment name occurs in a structure dictionary in SMILES format or MOL file format

Vander Stouw et al. shows a process of converting chemical names into structures. Vander Stouw et al. shows a step to identify the word root corresponding to the main ring or chain via dictionary look-up, retrieve the corresponding connection table fragment, which reads on testing a dictionary for the occurrence of a fragment (p. 187, col. 1). Vander Stouw et al. shows the successful identification of names to connection table conversion by testing the occurrence of a name in a structure dictionary (p. 190, col. 1)

Vander Stouw et al. does not show the SMILES or MOL formats of connection tables.

Drefahl et al. teach a SMILES structure dictionary (abstract, sent. 3). Drefahl et al. shows representations comprising SMILES type representations (p.888).

Murray-Rust et al. shows chemical representations can be MOL type representation and SMILES type representations (p. 626). Murray-Rust et al. shows MOL type representations have the advantage of being extremely terse (p. 626, col. 1).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above with the structure dictionary of Vander Stouw et al. because the technique of querying a structure dictionary with identified chemical name fragments was recognized as part of the ordinary capabilities of one skilled in the art. One of ordinary skill in the art would have been capable of applying this known technique to the method of partitioning text documents that was ready for improvement and the results would have been predictable to one of ordinary skill in the art. It would have been further obvious to one of ordinary skill in the art at the time of invention to combine the teachings Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above and Vander Stouw et al. with the SMILES and MOL notations of Drefahl et al. and Murray Rust et al. because Drefahl et al. and Murray-Rust et al. show that SMILES and MOL notations provides a compact and computationally amenable way to encode chemical structure information. One would have had a reasonable

expectation of success because Drefahl et al. describe the successful application of a SMILES dictionary structure-based retrieval and searching.

The following rejection is necessitated by amendment of the claims.

Claims 18 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above, and further in view of Kemp et al.

Claims 18 and 36 are drawn to tokenizing a document to produce a series of tokens.

Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above shows a method of partitioning a text document.

Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali do not explicitly teach the tokenization of documents.

Kemp et al. teach the tokenization of documents into a sequence of tokens (p. 547, 2nd para, sent. 2). Kemp et al. teach regarding text processing procedures that even simple methods can achieve very high degree of success (abstract).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the method of Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above with the tokenization of Kemp et al. because Kemp et al.

shows tokenization is useful to prepare data for automated analysis. One would have had a reasonable expectation of success because Kemp et al. teach regarding text processing procedures that even simple methods can achieve very high degree of success.

The following rejection is necessitated by amendment of the claims.

Claims 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above, and further in view of Shivaratri et al.

The claim is directed to a system of computers coupled through a data communications network comprising a unit to parse document text; a unit to recognize substructures in chemical name fragments; a unit to identify structural connectivity in fragments and substructures and store the structural connectivity information in a searchable index. Claim 44 is directed to searching with a key word that is not a chemical name. Claim 45 is directed to looking up structures in a structure dictionary. Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above shows a method of partitioning a text document. Regarding claim 44, Moore et al. and Singh et al. show that chemical terms keywords and structures can be searched as applied to claims 2 and 20. Regarding claim 45, Brecher shows looking up structures in a structure dictionary as applied to claims 7 and 25 above.

Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali do not show a distributed computing environment.

Shivaratri et al. teach a system of computers coupled through a data communication network to generate a distributed computing system (p. 33, para 4, sent. I).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the method of Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above with the teachings of Shivaratri et al. because distributing computational loads improves performance of computational tasks. One would have been motivated by Shivaratri et al. who describe the advantages of distributed computing systems as offering high performance, availability, and extensibility at low cost (p. 33, para. 1, sent.2). One would have had a reasonable expectation of success because Shivaratri et al. describe the successful implementation of distributed computing systems.

The following rejection is necessitated by amendment of the claims.

Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above, and further in view of Shivaratri et al. as applied to claims 43-45, and further in view of Vander

Stouw (Journal of Chemical Documentation, Vol. 14, No. 4, p. 185-193, 1974), in view of Drehfal et al. and in view of Murray-Rust.

Claim 46 is directed to a step of testing if a chemical fragment name occurs in a structure dictionary in SMILES format or MOL file format.

Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above, and further in view of Shivaratri et al. as applied to claims 43-45 shows a distributed computing system for partitioning text documents.

Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali and further in view of Shivartri et al. do not show a testing if a fragment name occurs in a structure dictionary in SMILES format or MOL file format

Vander Stouw et al. shows a process of converting chemical names into structures. Vander Stouw et al. shows a step to identify the word root corresponding to the main ring or chain via dictionary look-up, retrieve the corresponding connection table fragment, which reads on testing a dictionary for the occurrence of a fragment (p. 187, col. 1). Vander Stouw et al. shows the successful identification of names to connection table conversion by testing the occurrence of a name in a structure dictionary (p. 190, col. 1)

Vander Stouw et al. does not show the SMILES or MOL formats of connection tables.

Drefahl et al. teach a SMILES structure dictionary (abstract, sent. 3). Drefahl et al. shows representations comprising SMILES type representations (p.888).

Murray-Rust et al. shows chemical representations can be MOL type representation and SMILES type representations (p. 626). Murray-Rust et al. shows MOL type representations have the advantage of being extremely terse (p. 626, col. 1).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above with the structure dictionary of Vander Stouw et al. because the technique of querying a structure dictionary with identified chemical name fragments was recognized as part of the ordinary capabilities of one skilled in the art. One of ordinary skill in the art would have been capable of applying this known technique to the method of partitioning text documents that was ready for improvement and the results would have been predictable to one of ordinary skill in the art. It would have been further obvious to one of ordinary skill in the art at the time of invention to combine the teachings Allen et al., in view of Brecher, in view of Singh et al., in view of Moore et al., and in view of Cardinali as applied to claims 1-3, 7, 9-17, 19-20, 25, 27, and 29-35 above and Vander Stouw et al. with the SMILES and MOL notations of Drefahl et al. and Murray Rust et al. because Drefahl et al. and Murray-Rust et al. show that SMILES and MOL notations provides a compact and computationally amenable way to encode chemical structure information. One would have had a reasonable expectation of success because Drefahl et al. describe the successful application of a SMILES dictionary structure-based retrieval and searching.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARLHEINZ R. SKOWRONEK whose telephone number is (571)272-9047. The examiner can normally be reached on 8:00am-5:00pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marjorie Moran can be reached on (571) 272-0720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KARLHEINZ R SKOWRONEK/
Examiner, Art Unit 1631

9 November 2009